MICROBIAL OBSERVATORIES

SPECIAL COMPETITION ANNOUNCEMENT

DIRECTORATE FOR BIOLOGICAL SCIENCES

DEADLINE DATE: ***February 22, 1999***

NATIONAL SCIENCE FOUNDATION

MATRIX OF PROGRAM REQUIREMENTS

General Information

Program Name: Microbial Observatories (MO)

Short Description/Synopsis of Program:

The National Science Foundation (NSF), Directorate for Biological Sciences (BIO) announces a special competition to establish research activities by individual investigators or teams of investigators at established environmental research sites where microbes can be discovered and their diversity, phylogenetic relationships, interactions, and novel properties described and characterized. As defined in this announcement established sites include Long-Term Ecological Research sites, biological field stations, marine and freshwater laboratories, or other similar facilities. The long-term goal of this activity will be the development of a network of microbial observatories dedicated to monitoring, sampling and characterizing the diversity and behavior of microbes and microbial communities over time and across environmental gradients.

Cognizant Program Officer(s):

Phillip Harriman, by phone (703) 306-1439 or by e-mail pharrima@nsf.gov or momcb@nsf.gov
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Applicable Catalog of Federal Domestic Assistance (CFDA) No.: 47.074-Biological sciences

Eligibility

- **Limitation on the categories of organizations that are eligible to submit proposals:** None
- **PI eligibility limitations:** None
- **Limitation on the number of proposals that may be submitted by an organization:** None. However, a Principal Investigator may not submit the same proposal or proposals that significantly overlap with the microbial discovery activities of the NSF Life in Extreme Environments (LexEn) competition.

Award Information

- **Type of award anticipated:** Standard Grant or Continuing Grant
- **Number of awards anticipated in FY 1999:** 5-10 awards
- **Amount of funds available:** Approximately $2.5 million will be available for this competition in FY 1999.
- **Anticipated date of awards:** August 1999

Proposal Preparation Instructions

Letter of Intent requirements: Preliminary inquiry strongly encouraged.

Preproposal requirements: None

Proposal preparation instructions: Standard GPG plus supplementary guidance.

Deviations from standard (GPG) proposal preparation instructions: PIs must complete the BIO Proposal Classification Form (PCF).

Budgetary Information

Cost sharing/matching requirements: None

Indirect cost (F&A) limitations: None

Other budgetary limitations: Funds may not be requested or used for construction or renovation of facilities.

FastLane Requirements

Use of FastLane in Proposal Preparation & Submission: Entire Proposal Required

FastLane point of contact for this program: E-mail **biofl@nsf.gov.**

Deadline/Target Dates

Full Proposal Deadline: February 22, 1999

Proposal Review Information

- **Standard NSB Approved Merit Review Criteria plus supplementary criteria:**
  Description of supplementary criteria: Reviewers will also be asked to consider the following additional criteria: 1) potential of the observatory site for contributing significant new knowledge of microbial diversity; 2) robustness of the research design; 3) strength of the management plan, with special reference to the core observatory activities and the network through which organisms and data may be exchanged, leading to further investigations.

Award Administration Information

- **Special grant conditions anticipated:** None

MICROBIAL OBSERVATORIES
SPECIAL COMPETITION ANNOUNCEMENT

INTRODUCTION

Of the estimated 13 to 14 million species of living organisms on Earth, only about 1.75 million species have been scientifically described. The vast majority of undescribed species are prokaryotic (eubacteria, archaea) and eukaryotic (algae, protozoa, fungi) microorganisms. This reservoir of organismal diversity remains largely unexplored despite a range of colonizable habitats, biochemical and molecular processes, genomic variation, and consortial/symbiotic behavior far greater than that shown in larger, multicellular organisms. Prokaryotic and eukaryotic microbes are key elements of food webs, may inhibit or trigger significant ecological events (e.g. harmful algal blooms), and are responsible, directly or indirectly, for diseases of larger organisms. Prokaryotic and eukaryotic microbes produce numerous bioactive compounds, some of which are the basis for novel pharmaceuticals or other commercially useful products. Microbial communities are known to play fundamentally important roles in biogeochemical cycles. Studies of microbial evolution, especially at the genetic and genomic level, provide important clues about how microbial attributes appear, and are exchanged among cells and species, in nature. To discover and describe the diversity of microorganisms and novel microbial processes remain major challenges in biology.

To meet these challenges, the National Science Foundation (NSF), Directorate for Biological Sciences (BIO) announces a special competition to establish research activities by individual investigators or teams of investigators at established environmental research sites where microbes can be discovered and their diversity, phylogenetic relationships, interactions, and novel properties described and characterized. As defined in this announcement, established sites include Long-Term Ecological Research sites, biological field stations, marine and freshwater laboratories, or other similar facilities. The long-term goal of this activity will be the development of a network of microbial observatories dedicated to monitoring, sampling and characterizing the diversity and behavior of microbes and microbial communities over time and across environmental gradients.

PROGRAM DESCRIPTION

The guiding themes of this Microbial Observatories (MO) competition are: (1) **discovery** of as yet undescribed microorganisms and microbial consortia at established research sites representing diverse habitats; and (2) **characterization** of the properties and activities of newly described or poorly understood microbes and microbial communities. Likewise, the discovery of large numbers of organisms with novel biochemical, metabolic, genomic and other attributes will require Internet-accessible databases to facilitate the exchange of information among persons and groups likely to be interested in these findings, and through which more detailed investigations on particular microbial species or assemblages may be conducted, either at the site or elsewhere. Therefore, proposals to this competition should include aspects of the following elements:

- Exploring a particular site for previously undescribed microbes, and where necessary, developing methods to sample, quantify, monitor and experimentally manipulate previously undescribed microbes and microbial consortia;

- Establishing or participating in an established Internet-accessible knowledge network to disseminate the information resulting from this activity;

- Providing educational and outreach activities, such as formal/informal training for persons interested in microbial biology research, and activities that will broaden the participation of underrepresented groups.

Examples of areas for further characterization include but are not limited to:

- Studies to determine the phylogenetic, physiological, metabolic and genomic properties and mechanisms responsible for microbial growth, adaptation and survival in natural environments;

- Studies of the mechanistic basis of interactions among microbes and of microbes with co-habitating non-microbial species, including mechanisms for the exchange of genetic material;

- Studies of the diversity of microbial processes for anaerobic and aerobic flow of energy and cycling of nutrients, including aquatic, soil/rhizosphere, and sediment ecosystems.

As part of characterizing the microorganismal diversity at a site, projects submitted to this competition may include studies of microbes that are pathogens of naturally occurring plant or animal populations, but not microorganisms that are pathogens of humans or of agricultural plants or animals.

Investigators with access to long-term environmental data and existing infrastructure - including long-term ecological research sites, biological field stations, marine and freshwater laboratories, or other similar facilities - are encouraged to apply. Proposals that show evidence of collaborative arrangements between academic and/or commercial groups to conduct more detailed investigations on particular microbes or microbial communities also are encouraged.

Explicitly discouraged are those proposals that lack a dimension beyond species discovery and routine phylogenetic analysis. Funds may not be requested or used for construction or renovation of facilities.

If the proposed activity incorporates those groups of protists, algae and fungi that are high priority for the federal agency members of the Integrated Taxonomic Information System (ITIS) partnership (see http://www.itis.usda.gov/itis/), it may be eligible for assistance by ITIS or its member agencies. The proposal may be submitted under joint NSF/ITIS aegis for support of biodiversity information in these groups. Microbial observatory proposals that have NSF/ITIS relevance, and are recommended for funding in the Microbial Observatories competition, may, at the discretion of MCB, be forwarded to a joint NSF/ITIS steering committee to consider supplemental funding.

The MO special competition is expected to complement similar microbial discovery activities described in the current Life in Extreme Environments (LExEn) program. Principal Investigators may not submit the same proposal or proposals that significantly overlap to both competitions. Given the complementary nature of the MO and LExEn competitions, it is planned to coordinate their review processes by scheduling their respective panels to enable joint consideration of appropriate proposals.

The National Science Foundation, Directorate for Biological Sciences will host an annual meeting of all MO and LExEn awardees who are engaged in microbial discovery activities. The purpose of this meeting will be to: facilitate an exchange of ideas and information; to promote interaction among investigators and sites; and, to build links between research programs with related or complementary objectives. Each proposal should include sufficient funds in its budget request to cover the costs of the Principal Investigator and Co-Principal Investigator(s) attendance at this meeting.

ELIGIBILITY

Proposals under the MO competition will be accepted from U.S. institutions that are eligible for awards from the National Science Foundation, including colleges, universities, and other nonprofit research institutions such as botanical gardens, marine and freshwater institutes, and natural history museums facilities (see *GPG*, Chapter I, Section D). As noted above, those institutions that are already engaged in environmental observatory activities, or are prepared to document major institutional commitment to such activities, and can support interdisciplinary activities involving field-oriented and laboratory investigations on prokaryotic and eukaryotic microbes, are encouraged to apply. The NSF encourages collaborations with scientists at foreign institutions; however, primary support for any foreign participants/activities must be secured through their own national programs.

Normally, NSF's Directorate for Biological Sciences does not support research with disease-related goals, including work on the etiology, diagnosis, or treatment of physical or mental disease, abnormality, or malfunction in human beings or animals. Studies of animal models for such conditions, the design and testing of drugs or other procedures for their treatment are also not eligible for support. NSF does not normally support technical assistance, pilot plant efforts, research requiring security classification, the development of products for commercial marketing, or market research for a particular project or invention.

AWARD INFORMATION

The NSF expects to fund approximately 5-10 awards in Fiscal Year 1999 depending on the quality of submissions and the availability of funds. The total award size (all years) is expected to range between $0.5M and $1M for a funding period not to exceed 5 years. All awards will be made as grants subject to specified reporting procedures. Approximately $2.5M is available for this initiative in Fiscal Year 1999. Competitions in future years are anticipated pending availability of funds.

Funding decisions are expected to be made by July 1999 with awards expected to start in August 1999.

INSTRUCTIONS FOR PROPOSAL SUBMISSION

A. Preliminary Inquiries

Potential applicants contemplating submitting a proposal to Microbial Observatories are strongly encouraged to contact the cognizant program officer, listed below, to explore whether their proposed activities fit within the guidelines of this competition. Concise e-mail inquiries should be sent to momcb@nsf.gov.

B. Proposal Preparation Instructions

Proposals to the Microbial Observatories (MO) competition require electronic submission via the NSF FastLane system in accordance with the guidelines provided in the "Instructions for Proposal Preparation" found in the *GPG*, Chapter II. The *GPG* is available on the NSF Web Site at the URL http://www.nsf.gov/cgi-bin/getpub?nsf992. Paper copies of *GPG* may be obtained from the NSF Publications Clearinghouse, Telephone (301) 947-2722 or by e-mail from pubs@nsf.gov. Include in proposals to MO the components listed in *GPG*, Chapter II, Section D. State information in each component as clearly and concisely as possible for merit review. Take special care in adhering to the requirements for page limitations, font size, and margins (see *GPG*, Chapter II, Section C). Proposals not strictly adhering to the requirements of the *GPG* and these guidelines are returned without review. Instructions and guidelines for the FastLane submission of proposals are detailed in *Instructions for Preparing and Submitting a Standard Proposal via FastLane* located at https://www.fastlane.nsf.gov/a1/newstan.htm. Also, see the "FastLane Submission" section below.

Guidelines are provided for specific sections of the proposal as follows:

Cover Sheet (NSF form 1207). In the NSF FastLane system follow instructions on proposal preparation. When completing the Cover Sheet click on the "Add Org Unit" button. Highlight "DIRECT FOR BIOLOGICAL SCIENCES" and click "OK". Scroll down to "DIV OF MOLECULAR AND CELLULAR BIOSCIENCE" and highlight "Microbial Observatories". Clicking "OK" designates this program as the NSF organizational unit of consideration.

Indicate clearly in the title of the proposal the general type(s) of microbe(s) to be studied (if known) and the site(s) to be investigated.

Project Summary. Summarize the proposed project, emphasizing its design, rationale and impact on our knowledge of microbial diversity and biology, and noting the societal and educational relevance of the work.

Project Description. The following elements should be included:

Results from Prior NSF Support. Describe a single award, to the PI or any of the co-PI(s), that is most closely related to the observatory proposal.

Rationale. Describe the activities to be conducted, with special reference to the microbe or microbial groups and systems to be included, the questions to be asked and the strategies for answering these questions, the theoretical or practical importance of the microbes and microbial systems to progress in microbiology and other scientific fields, and the societal and educational benefits that will accrue from this research.

Research and Management Plans. The ***Research Plan*** should describe the strategies, protocols, and timetables to be used in experimental procedures, as well as in collecting, preparing, documenting, and distributing the microbes to be examined, in sufficient detail to allow informed judgement by expert reviewers. Include: type(s) of site(s) and how it relates to the questions posed; methods for collecting, processing, vouchering and storing samples of biological materials such as specimens, tissues or DNA; the data to be recorded at the times of sampling; the repository for collections and accompanying data sets; the means by which collection and experimental data, along with other products, will be made available to the research community and other users - in particular, specific arrangements made with other parties for the further exploration of selected types of discoveries should be spelled out. It is expected that proposals will take advantage of available opportunities for meaningful integration of research with education and outreach activities, and present these as an integral part of the research plan.

The ***Management Plan*** should detail the duties and responsibilities of participants, including identification of a research team leader (usually the lead PI) and the operation of associated partners and knowledge networks. If the research is conducted in whole or in part on one or more organized sites for environmental research, support from the Director(s) of such site(s) should be indicated in the Plan, with copies of relevant documents included in the Special Information and Supplementary Information section of the proposal.

The ***Management Plan*** should also document compliance with applicable laws, regulations and procedures. Evidence that all relevant permits and

permissions have been obtained will be required prior to an award.

Research projects in the United States shall obey the laws of the political units (e.g. towns, counties, territories, states) in the geographic region(s) where site(s) are located, especially in regard to collecting permits, as well as the regulations of the U.S. Fish and Wildlife Service, Forest Service, Bureau of Land Management, National Park Service, or other responsible government agencies. The rights of private landowners are to be respected.

Proposals for research projects in Antarctica or Greenland must include information about the logistical and operational requisites of the proposed research, and any environmental impacts. Instructions on proposal preparation for research in Antarctica are provided in the Program Announcement and Proposal Guide for the Antarctic Program of the Office of Polar Programs (OPP), currently NSF 96-93, which can be found on the NSF Online Documents system at http://www.nsf.gov. Obtain information on working in Antarctica from the OPP prior to preparation of a proposal. All research projects in Greenland must be approved in advance by the Government of Denmark as stated in the Grant Policy Manual (NSF 95-26), Chapter 7, Article 763. The Grant Policy Manual is available on the NSF Online Documents system at http://www.nsf.gov. Applications for projects in which U.S. citizens and U.S. nationals are involved in any way (logistical, operational and/or financial support) shall be submitted to the Danish Government through diplomatic channels (i.e., through the U.S. Department of State and the American Embassy, Copenhagen) to the Danish Ministry of Foreign Affairs. The Arctic Research Program of OPP (703/306-1029) can assist in the submission of these applications, and should be contacted for instructions prior to preparation of a proposal.

Proposals intended to monitor marine or U.S. Great Lake habitats may require the scheduling of NSF-UNOLS ship time. These proposals must include a completed NSF-UNOLS Request Form (NSF Form 831). The UNOLS form may be obtained from the NSF Division of Ocean Sciences Ship Operations Program, National Science Foundation by calling (703) 306-1577, or directly from the UNOLS World Wide Web site at http://sio.ucsd.edu/supp_groups/shipsked/forms/NSFform.html. Mail the completed UNOLS Request Form with other materials cited in the "Proposal Due Dates" section of this announcement. If the proposal requires time aboard non-UNOLS vessels, the proposal budget must reflect the direct cost of ship time. Use of UNOLS or other ship time also requires that permits to enter sovereign waters, in compliance with international laws of the sea, be obtained with the assistance of the U.S. Department of State if the researchers plan to collect specimens in any nation's sovereign waters. The Ship Operations Program of the NSF can assist in these negotiations. Contact information can be found in the "general divisional information" section of the Geosciences Directorate, Division of Ocean Sciences web site at http://www.geo.nsf.gov/oce.

The ***Research and Management Plan*** must be included within the 15 page limit of the Project Description. None of its elements may be deferred to the "Special Information and Supplementary Documentation" section (see *GPG*, Chapter II).

Electronic Products. Describe the electronic database and other information (e.g. catalogues, descriptions, phylogenetic analyses, associated genetic, biochemical, molecular and environmental data, or other innovative products). The description of database activities must include information regarding hardware and software specifications, the data model, elements and structure of the database, the manner in which records will be captured in a quality-controlled manner, and capabilities for expansion. In projects that involve existing research sites discuss the use of existing electronic networks in databasing and dissemination of the research results. Description of database and information provision over the World Wide Web should include networking protocols, the integration of the specimen databases with other electronic information resources, and the means by which the availability of the products of the research will be sustained into the future. The last item may be documented by letters from Directors of computer centers or other units that house WWW servers. Include letters in the Special Information and Supplementary Documentation section.

Biographical Sketch. Provide a biographical sketch only for the senior participants (PIs, co-Pls whose names are listed on the cover page of the proposal, and postdoctoral fellows participating in the project). The biographical sketch for each PI must list the full names and institutions of that person's collaborators and co-authors on papers, books, proposals or other works. The PI's doctoral major professor and post-doctoral advisor(s), but not members of advisory committees, should be listed, as well as all of the PI's own doctoral advisees.

Budget Justification. Include a breakdown of any foreign costs or support of foreign scientists or students. Provide a clear explanation of the need for each listed item of equipment, supplies, or travel, including the rationale for choosing the requested option over others that might be available.

BIO Proposal Classification Form (PCF). Complete the BIO PCF, available on the NSF FastLane system. The PCF is an on-line coding system that allows the Principal Investigator to characterize his/her project when submitting proposals to the Directorate for Biological Sciences. Once a PI begins preparation of his/her proposal in the NSF FastLane system and selects a division, cluster, or program within the Directorate for Biological Sciences as the first or only organizational unit to review the proposal, the PCF will be generated and available through the Form Selector screen. Additional information about the BIO PCF is available in FastLane at http://www.fastlane.nsf.gov/a1/BioInstr.htm.

Special Information and Supplementary Documentation. The Special Information and Supplementary Documentation (see *GPG*, Chapter II, Section D, Item 10) may include only copies of permits, letters of agreement from collaborators, letters and documentation from curators of institutions in which specimens will be deposited and from scientists who will work with particular materials, and letters from institutions that document cost-sharing arrangements and support for observatory activities in the long term.

Applicants may include letters of support in the FastLane submission by scanning the documents and adding them at the end of the Project Description file, clearly labeled, or mail 15 collated copies of all materials to the MO competition at the same time that the signed cover sheet and certification page, and BIO proposal classification form are sent (see the Proposal Submission section below). This information is not counted as part of the 15 page limit of the Project Description.

C. Proposal Due Dates

Proposals must be sent by 5:00 p.m., submitter's local time, February 22, 1999 via the NSF FastLane system. It is recommended that you submit earlier, if possible.

In addition, you must mail the following materials directly to Microbial Observatories (MO):

- a paper copy of the cover sheet, including the certification page (page 2 of 2) signed by the PI(s) and an institutional representative;
- the BIO classification form;
- the UNOLS Request Form (NSF Form 831), **if applicable**; and,
- fifteen (15) collated copies of the Special Information and Supplementary Documentation material only if the PI has opted to send in hard copy instead of inserting scanned copies at the end of the Project Description file in the FastLane submission.

Unless requested by NSF, additional information may not be sent following proposal submission. **The mailed materials must be received by NSF no later than February 26, 1999**. NSF is not responsible for misdirected or delayed mail. Send materials to:

Microbial Observatories Special Competition –
NSF 99-36
Division of Molecular and Cellular Biosciences
National Science Foundation
4201 Wilson Boulevard, Room 655
Arlington, VA 22230

Do not mail copies of the proposal. NSF will make the appropriate number of copies of the proposal.

D. FastLane Submission

In order to use NSF FastLane to prepare and submit a proposal, you must have the following software: Netscape Navigator 3.0 or above, or Microsoft Internet Explorer 4.01 or above; Adobe Acrobat Reader 3.0 or above for viewing PDF files; and Adobe Acrobat 3.X or Aladdin Ghostscript 5.10 or above for converting files to PDF.

To use FastLane to prepare the proposal your institution needs to be a registered FastLane institution. A list of registered institutions and the FastLane registration form are located on the FastLane Home Page. To register an organization, authorized organizational representatives must complete the registration form. Once an organization is registered, PIN for individual staff are available from the organization's sponsored projects office.

To access FastLane, go to the NSF Web site at http://www.nsf.gov, then select "FastLane," or go directly to the FastLane home page at http://www.fastlane.nsf.gov/. Please see "Instructions for Preparing and Submitting a Proposal to the NSF Directorate for Biological Sciences" located at http://www.fastlane.nsf.gov/a1/BioInstr.htm. Additionally, read the "PI Tipsheet for Proposal Preparation" and the "Frequently Asked Questions about FastLane Proposal Preparation," accessible at https://www.fastlane.nsf.gov/a1/A1Prep.htm.

IMPORTANT NOTE: For technical assistance with FastLane, please send an e-mail message to biofl@nsf.gov. If you have inquiries regarding other aspects of proposal preparation or submission, please contact the cognizant program officer, preferably *at least three weeks before the competition deadli*

MERIT REVIEW

A. NSF Proposal Review Process

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program Officers charged with the oversight of the review process. NSF invites the proposer to suggest, at the time of submission, the names of appropriate or inappropriate reviewers. Special care is taken to ensure that reviewers have no immediate and obvious conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority serving institutions, adjacent disciplines to that principally addressed in the proposal, first time NSF reviewers, etc.

Proposals will be reviewed against the following general merit review criteria established by the National Science Board. Following each criterion are potential considerations that the reviewer may employ in the evaluation. These are suggestions and not all will apply to any given proposal. Each reviewer will be asked to address only those that are relevant to the proposal and for which he/she is qualified to make judgments.

1. What is the intellectual merit of the proposed activity?

How important is the proposed activity to advancing knowledge and understanding within its own field and across different fields? How well qualified is the proposer (individual or team) to conduct the project? To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

2. What are the broader impacts of the proposed activity?

How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

Reviewers will also be asked to consider the following additional criteria: 1) potential of the observatory site for contributing significant new knowledge of microbial diversity; 2) robustness of the research design; 3) strength of the management plan, with special reference to the core observatory activities and the network through which organisms and data may be exchanged, leading to further investigations.

Integration of Research and Education

One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learner perspectives. PIs should address this issue in their proposal to provide reviewers with the information necessary to respond fully to both NSF merit review criteria. NSF staff will give it careful consideration in making funding decisions.

Integrating Diversity into NSF Programs, Projects, and Activities

Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports. PIs should address this issue in their proposal to provide reviewers with the information necessary to respond fully to both NSF merit review criteria. NSF staff will give it careful consideration in making funding decisions.

B. Review Protocol and Associated Customer Service

Most proposals submitted to the NSF are reviewed by mail review, panel review, or some combination of mail and panel review.

Proposals submitted to this activity will be evaluated by a combination of mail and panel review. NSF will be able to tell applicants whether their proposals have been declined or recommended for funding within six months for 95 percent of proposals in this category.

GRANT AWARD AND ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made ***to the submitting organization*** by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the lead Principal Investigator.

B. Grant Award Conditions

Grants awarded as a result of this announcement are administered in accordance with the terms and conditions of NSF GC-1, "Grant General Conditions," or FDP-III, "Federal Demonstration Project General Terms and Conditions," depending on the grantee organization. Copies of these documents are available at no cost from the NSF Clearinghouse, P.O. Box 218, Jessup, Maryland 20794-0218, telephone (301) 947-2722, or via e-mail to pubs@nsf.gov. More comprehensive information is contained in the NSF *Grant Policy Manual* (NSF 95-26), available on the NSF OnLine Document System located at http://www.nsf.gov/, or for sale through the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

Within 90 days after expiration of a grant, the PI also is required to submit a final project report. Approximately 30 days before expiration, NSF will send a notice to remind the PI of the requirement to file the final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for the PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

NSF has implemented a new electronic project reporting system, available through FastLane, which permits electronic submission and updating of project reports, including information on: project participants (individual and organizational); activities and findings; publications; and other specific products and contributions. Reports will continue to be required annually and after the expiration of the grant, but PIs will not need to re-en
information previously provided, either with the proposal or in earlier updates using the electronic system.

Effective October 1, 1998, PIs are required to use the new reporting format for annual and final project reports. PIs are strongly encouraged to submit reports electronically via FastLane. For those PIs who cannot access FastLane, paper copies of the new report formats may be obtained from the NSF Clearinghouse as specified above. NSF expects to require electronic submission of all annual and final project reports via FastLane beginning in October, 1999.

D. New Awardee Information

If the submitting organization has never received an NSF award, it is recommended that the organization's appropriate administrative officials become familiar with the policies and procedures in the NSF *Grant Policy Manual* which are applicable to most NSF awards. The "Prospective New Awardee Guide" (NSF 97-100) includes information on: Administration and Management Information; Accounting System Requirements and Auditing Information; and Payments to Organizations with Awards. This information will assist an organization in preparing documents that NSF requires to conduct administrative and financial reviews of an organization. The guide also serves as a means of highlighting the accountability requirements associated with Federal awards. This document is available electronically on NSF's Web site at http://www.nsf.gov/cgi-bin/getpub?nsf97100.

CONTACTS FOR ADDITIONAL INFORMATION

Questions about the Microbial Observatories Competition may be addressed to:
Phillip Harriman, by phone (703) 306-1439 or by e-mail pharrima@nsf.gov or momcb@nsf.gov
Charles Liarakos, by phone (703) 306-1440 or by e-mail cliarako@nsf.gov
Joann Roskoski, by phone (703) 306-1480 or by e-mail jroskosk@nsf.gov
Grace Wyngaard, by phone (703) 306-1420 or by e-mail gwyngaar@nsf.gov
Judy Verbeke by phone (703) 306-1420 or by e-mail jverbeke@nsf.gov

GENERAL INFORMATION

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Grantees are wholly responsible for conducting their project activities and preparing the results for publication.

Thus, the Foundation does not assume responsibility for such findings or their interpretation.
NSF welcomes proposals from all qualified scientists, engineers, and educators. The Foundation strongly encourages women, minorities, and persons with disabilities to compete fully in its programs. In accordance with federal statutes, regulations, and NSF policies, no person on grounds of race, color, age, sex, national origin, or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF. Some programs may have special requirements that limit eligibility.

Facilitation Awards for Scientists and Engineers with Disabilities (NSF 91-54) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation regarding NSF programs, employment, or general information. TDD may be accessed at (703) 306-0090; FIRS at 1-800-877-8339.

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the review process; to applicant institutions/grantees to provide or obtain data regarding the proposal-review process, award decisions, or the administration of awards; to government contractors, experts, volunteers, and researchers and educators as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 *Federal Register* 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 *Federal Register* 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Reports Clearance Officer; Information Dissemination Branch, DAS; National Science Foundation; Arlington, VA 22230.

The program described in this announcement is in the category 47.074 (BIO) of the Catalog of Federal Domestic Assistance.

YEAR 2000 REMINDER

In accordance with NSF Important Notice No. 120 dated June 27, 1997, Subject: Year 2000 Computer Problem, NSF awardees are reminded of their responsibility to take appropriate actions to ensure that the NSF activity being supported is not adversely affected by the Year 2000 problem. Potentially affected items include computer systems, databases, and equipment. The National Science Foundation should be notified if an awardee concludes that the Year 2000 will have a significant impact on its ability to carry out an NSF-funded activity. Information concerning Year 2000 activities can be found on the NSF Web site at http://www.nsf.gov/oirm/y2k/start.htm.

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